

# INSERTION MAGNETIC FLOWMETER

## FMG900 Series



- ✓ Durable
- ✓ Adjustable Depth
- ✓ Hot-Tap Available
- ✓ Brass or Stainless Steel
- ✓ Immersibility Available
- ✓ Reverse Flow Output Available
- ✓ 3 to 48" Diameter Pipes

The complete lack of moving parts of this insertion flow sensor is the source of its reliability. There is no rotor to stop turning in dirty water and there are no bearings to wear out. Brass and stainless steel models withstand a variety of temperature, pressure, and chemical conditions. Reverse flow output and immersibility are optional. A rapidly reversing magnetic field is produced in the lower housing. As the fluid moves through this field, a voltage is generated that is measured and translated into a frequency signal proportional to flow rate. This square wave signal can be sent directly to a PLC, control or converted to 4 to 20 mA with the FTB700-T shown below (optional). A modular system of electronics can be attached directly to the flow sensor or remotely mounted. The FMG900 series can provide full indication of rate and total with the (optional) FTB700-D or just a 4 to 20 mA output with the (optional) FTB700-T blind transmitter. The adaptor fitting of the standard unit is a male NPT, and can be directly threaded into ordinary saddles or threaded weld fittings. The hot tap versions include an isolation valve, allowing hot-tap installation, or installation and removal under pressure. Hot tap units include the appropriate installation valve.



FMG903 for 76 to 254 mm (3 to 10") pipe, shown smaller than actual size.



FMG907 for 76 to 254 mm (3 to 10") pipe with hot tap insertion, shown smaller than actual size.

### SPECIFICATIONS

**Power:** 12 to 24 Vdc, 250 mA  
**Flow Range:** 0.28 to 20 ft/second (0.08 to 6.09 m/second)  
**Connection Size**  
**Standard Units:** 1½ NPT male, hot tap models, 2 NPT male  
**Ambient Temperature:** -17 to 72°C (0 to 160°F)  
**Fluid Temperature:** 0 to 93°C (32 to 200°F)  
**Maximum Pressure:** 13.8 bar (200 psi)  
**Minimum Conductivity:** 20 microSiemens/cm  
**Shaft and Fitting:** 316 SS or brass (depending on model)  
**Electrodes:** Hastelloy®

**Electrode Cap:** PVDF  
**Housing:** Cast powder-coated aluminum  
**Valve:** Bronze or SS (depending on model)  
**O-Ring:** EPDM  
**Accuracy:** ±1% of full scale  
**Output:** Square wave pulse, opto isolated, 550 Hz @ 20 ft/second 6 mA maximum, 30 Vdc forward flow standard (reverse flow optional)  
**Empty Pipe:** Defaults to zero flow

# RATE AND TOTAL DISPLAY FOR THE FMG900 SERIES

## FTB700-D Series

- ✓ Simple Setup
- ✓ Loop Powered
- ✓ Remote or Flow Sensor Mounted Indicator
- ✓ Rugged Metallic Housing
- ✓ Non-volatile Memory

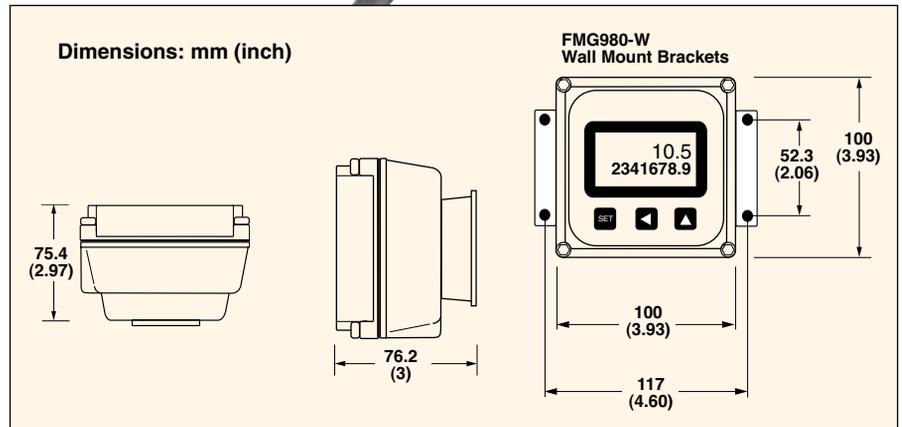


The FTB700-D Series flow displays are microcontroller-based indicator/transmitters that display flow rate and total and provide output signals. The FTB700-D is powered by external DC voltage and has both pulse and 4 to 20 mA analog outputs. When the FTB700-D is being used in the 4 to 20 mA mode, it is a "two-wire" or "loop-powered" device, meaning that the 4 to 20 mA output signal doubles as its power supply.

The addition of a dual-relay output board (-R2) allows for certain applications requiring contact output isolation (e.g., certain metering pumps and water treatment controls). Dual solid state relays provide exactly the same pulse output as the standard unit, and each can signal one external device.

The FTB700-D can be mounted on the meter (-M) or remotely wall mounted with the brackets provided (FTB700D-W). Housings for the "-W" and "-M" models are rugged cast aluminum, potted and gasketed for maximum environmental protection. A membrane keypad allows settings to be changed without removing the cover. (Password protection, a standard feature, can be used to prevent settings from being changed.)

FTB700-D and FTB700D-WMB, see accessory chart on next page, shown smaller than actual size.



### SPECIFICATIONS

**Power:** 12 to 30 Vdc, (4 to 20 mA)

**Display Rate:** 6-digit autorange, ½" character height

**Total:** 8-digit, ⅝" character height

**Outputs Current Sinking Pulse:** Scaled pulse output (0.1 second duration 6.1 Hz maximum) (or high alarm output or low alarm output). Sensor pass-through pulse output (unscaled)

**Analog:** 4 to 20 mA

**Pulse Output Range:**

0.1 - 9999999.9 units/pulse

**Input:** 5V pulse or contact closure

**Input Range:** 1.0 - 1,500 pulses/second

**K-Factor Range:** 0.001 - 99999.999

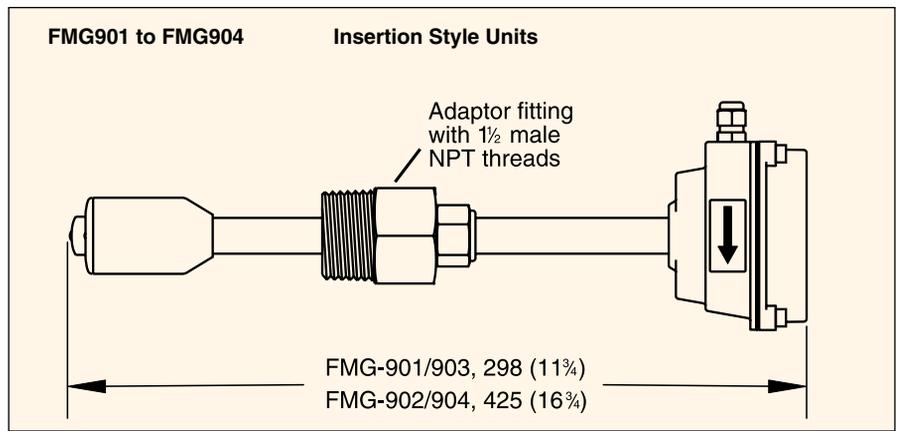
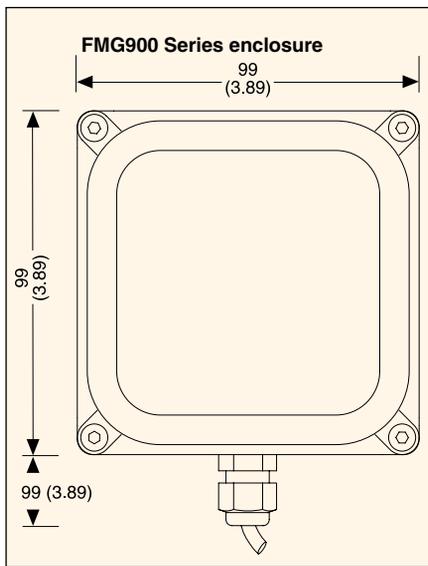
**Flow Alarm Output Range:**

0.01 - 999999.99

**Operating Temperature:** -30 to 65°C (-22 to 148°F)

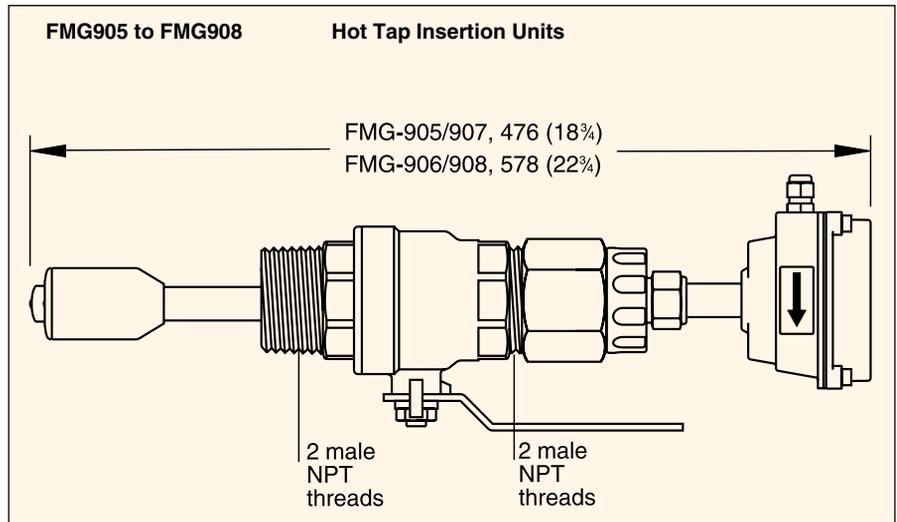
**Environmental:** NEMA 4X, (IP66)

**Regulatory:** CE



Dimensions: mm (inch)

Flow Range LPM (GPM)		
Pipe Size	Min Flow	Max Flow
3	23 (6)	1666 (440)
4	42 (11)	2964 (783)
6	95 (25)	6670 (1762)
8	167 (44)	11,860 (3133)
10	261 (69)	18,530 (4895)
12	375 (99)	26,687 (7050)
14	507 (134)	36,325 (9596)
16	662 (175)	47,443 (12,533)
18	840 (222)	60,050 (15,863)
20	1037 (274)	74,134 (19,584)
24	1495 (395)	160,749 (42,200)
30	2336 (617)	166,800 (44,064)
36	3361 (888)	240,192 (63,452)



To Order	
Model No.	Description
<b>FMG901</b>	Brass insertion style magmeter, 76 to 254 mm (3 to 10") pipe
<b>FMG902</b>	Brass insertion style magmeter, 254 to 1219 mm (10 to 48") pipe
<b>FMG903</b>	SS insertion style magmeter, 76 to 254 mm (3 to 10") pipe
<b>FMG904</b>	SS insertion style magmeter, 254 to 1219 mm (10 to 48") pipe
<b>FMG905</b>	Brass insertion style magmeter, hot tap, 76 to 254 mm (3 to 10") pipe
<b>FMG906</b>	Brass insertion style magmeter, hot tap, 254 to 1219 mm (10 to 48") pipe
<b>FMG907</b>	SS insertion style magmeter, hot tap, 76 to 254 mm (3 to 10") pipe
<b>FMG908</b>	SS insertion style magmeter, hot tap, 254 to 1219 mm (10 to 48") pipe

**Accessories**

Model No.	Description
<b>FTB700-T</b>	Blind 4 to 20 mA transmitter
<b>FTB700D-WMB</b>	Wall mount bracket for FTB700-D
<b>FTB700-D</b>	Remote rate and total display with 4 to 20 mA output
<b>PSU-93</b>	24 Vdc power supply, 200 mA
<b>TX4-100</b>	4 conductor hook-up wire, 30 m (100')

Comes complete with operator's manual.

For reverse flow option add a "-RF" to the model number for additional cost.

**Ordering Examples:** **FMG901**, brass insertion style magmeter, **PSU-93**, power supply and **TX4-100**, multi conductor wire.  
**FMG903**, 316SS insertion style magmeter, **PSU-93**, power supply and **TX4-100**, multi conductor wire.